



2016 Spring Electrofishing (SEI and SEII) Summary Report

White Clay Lake (WBIC 326400)

Shawano County

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Introduction and Survey Objectives

In 2016, the Department of Natural Resources conducted two different one night boomshocking surveys of White Clay Lake in order to provide insight and direction for the future fisheries management of this water body. Primary sampling objectives of this survey are to characterize species composition, relative abundance, and size structure. The following report is a brief summary of the activities conducted, general status of fish populations and future management options.

Acres: 234 Shoreline Miles: 3.5 Maximum Depth (feet): 22
Lake Type: Spring Public Access: 1 Boat Launch
Regulations: 25 Panfish may be kept, but only 10 of any one species, all other species statewide default regulations

WISCONSIN DNR CONTACT INFO.

Elliot Hoffman - Fisheries Technician
Wisconsin Dept. of Natural Resources
647 Lakeland Rd.
Shawano, WI 54166

Elliot Hoffman Phone: 715-526-4231
E-mail: elliot.hoffman@wisconsin.gov

Survey Information

Site location	Survey Date(s)	Water Temp. (F)	Target Species	Total Miles Shocked	No. of Stations	Gear	Dippers
White Clay Lake	4/15/2016 and 5/24/2016	45 and 69	All	6.12	9	Boomshocker	2

Survey Method

- White Clay Lake was sampled according to spring electrofishing (SEI and SEII) protocols as outlined in the statewide lake assessment plan. The primary objective for this sampling period is to count and measure adult bass and panfish. Other gamefish may be sampled but are considered by-catch as part of this survey.
- The entire shoreline was sampled with a boomshocker. All fish captured were identified to species and measured for length. A subsample of fish were weighed and age structures collected for age and growth analysis.
- Fish metrics used to describe fish populations include proportional stock density, catch per effort, length frequency distribution, and mean age at length.



Fish Metric Descriptions

PSD, CPUE, LFD and Growth

Proportional Stock Density (PSD) is an index used to describe size structure of fish. It is calculated by dividing the number of quality size fish by the number of stock size fish for a given species. PSD values in the 30 to 50 percent range generally describe a balanced fish population.

Catch per unit effort (CPUE) is an index used to measure fish population relative abundance which simply refers to the number of fish captured per unit of distance or time. For lake surveys we typically quantify CPUE by the number and size of fish per mile of shoreline. CPUE indexes are compared to statewide data by percentiles. For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state.

Length frequency distribution (LFD) is a graphical representation of the percentage of fish captured by one inch size intervals. Smaller fish (or younger age classes) may not always be represented in the length frequency due to different habitat usage or sampling gear limitations.

Mean Age at Length is an index used to assess fish growth. Growth structures (otoliths, spines, or scales) are collected from a specified length bin of interest (e.g. 7.0-7.5 inches for bluegill). Mean age is compared to statewide data by percentile with growth characterized by the following benchmarks: slow (<33rd percentile); moderate (33rd to 66th percentile); and fast (>66th percentile).

Size Structure Metrics

Species	Total	Average Length (inches)	Length Range (inches)	Stock and Quality Size (inches)	Stock No	Quality No	PSD	Percentile Rank	Size Rating
BLUEGILL	58	5.7	3.1 - 9.3	3.0 and 6.0	58	30	52%	73rd	Moderate - High
BLACK CRAPPIE	14	7.9	5.5 - 10.6	5.0 and 8.0	14	7	50%	56th	Moderate
LARGEMOUTH BASS	132	15.4	4.4 - 20.9	8.0 and 12.0	130	124	95%	96th	High
NORTHERN PIKE	35	23.1	15.5 - 33.1	14.0 and 21.0	35	24	69%	91st	High
PUMPKINSEED	42	6.4	4.5 - 8.1	3.0 and 6.0	42	32	76%	88th	High
WALLEYE	51	17.7	6.9 - 27.0	10.0 and 15.0	50	35	70%	76th	Moderate -
YELLOW PERCH	53	6.5	4.7 - 9.7	5.0 and 8.0	51	5	10%	69%	Moderate

Abundance Metrics

Species	CPUE Total (no per mile)	Percentile Rank	Overall Abundance Rating	Length Index	Length Index CPUE	Percentile Rank	Abundance Rating
BLUEGILL	58.0	40th	Moderate	≥ 7.0	9.0	60th	Moderate
BLACK CRAPPIE	14.0	70th	Moderate	≥ 8.0	7.0	76th	Moderate
PUMPKINSEED	42.0	91st	High	≥ 7.0	10.0	96th	High
WALLEYE	8.3	46th	Moderate	≥ 18.0	4.4	89th	Moderate - High
YELLOW PERCH	53.0	88th	Moderate -	≥ 8.0	5.0	94th	High
LARGEMOUTH BASS	21.6	62nd	Moderate	≥ 14.0	18.5	96th	High
NORTHERN PIKE	5.7	88th	Moderate - High	≥ 26.0	1.3	98th	High

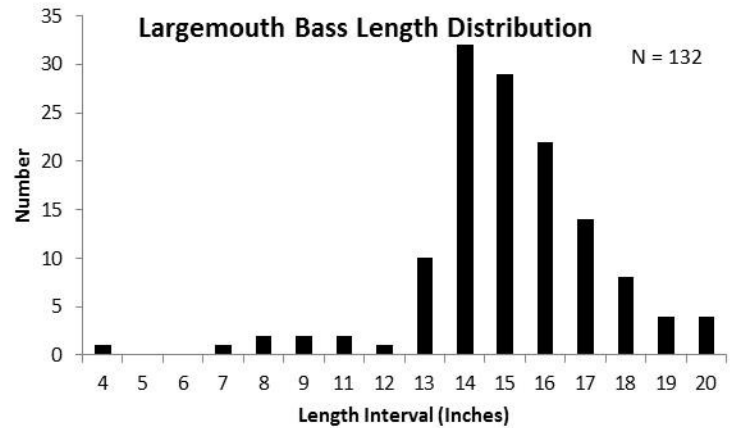
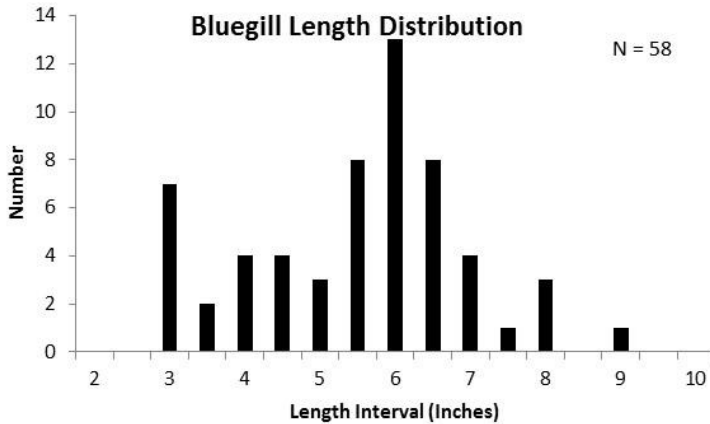


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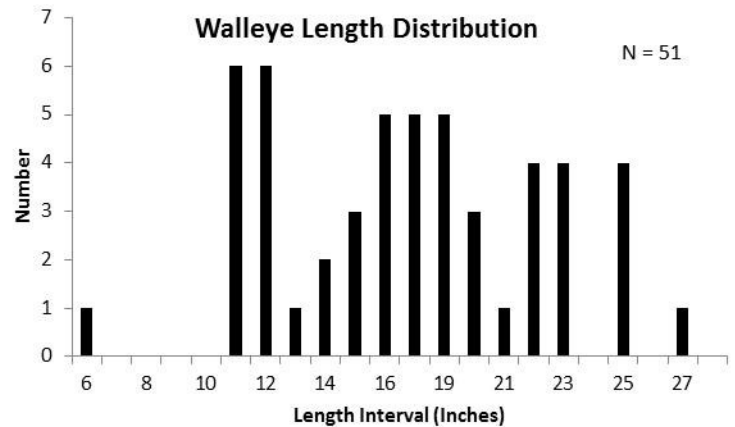
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Summary

- A total of 437 fish in 14 species were collected during our surveys. The most frequently encountered and common species were largemouth bass (132), bluegill (58), walleye (51) and pumpkinseed (42).
- Common carp, a non-native species, were found in our surveys. One state listed species of special concern, lake chubsucker, was also found at low abundance levels during our netting survey.
- Other species sampled in low abundance included black bullhead (2), black crappie (14), bowfin (1), brown bullhead (23), common carp (20), golden shiner (1), longnose gar (1), and yellow bullhead (4).
- Largemouth bass was the dominant gamefish captured in our survey. Size structure and abundance metrics were found at high levels. The largest bass sampled was 20.9 inches and 85% of bass caught were greater than 14.0 inches. Growth metrics indicated fast growth for quality-size bass.
- Thirty five northern pike were sampled. Fyke netting would be the more appropriate sampling technique to assess this population.
- Fifty one walleye were captured, the sizes ranged from 6.9 - 27.0 inches. It is likely these fish are from the annual stocking by the area sportsmen's club.
- Panfish populations were mainly comprised of bluegill, pumpkinseed, black crappie, and yellow perch. Bluegill were found in moderate to high density and showed average size structure with 52% of our catch greater than 6.0 inches and 15% greater than 7.0 inches. Black crappie were found in low abundance and showed average size with 50% of our catch greater than 8.0 inches. Bluegill and black crappie growth was fast when compared to statewide data. Pumpkinseed and yellow perch were found at moderately high density but yellow perch were comprised mainly of small fish (<6.0 inches). Pumpkinseeds were found up to 8.1 inches.



Management Options

This survey was primarily intended to assess largemouth bass and sunfish populations. Other species are captured but different survey techniques are more appropriate to assess their population metrics. Therefore, management recommendations are focused on bass and panfish.

Largemouth Bass

- Management Objective: Maintain largemouth CPUE of bass > 14.0 inches at 15 - 20 per mile. Currently we are not observing much for younger year classes of largemouth bass. We will continue to monitor year class strength in the next survey rotation.
- Management Action: No changes at this time.

Panfish

- Panfish size structure was found at optimal levels. The experimental panfish regulation put in place in 2016 should help to continue this.
- Management Objective: Maintain bluegill size structure and maintain relative abundance levels.
- Management Action: Panfish regulation of 25 panfish may be kept but only 10 of any one species is currently in place to protect the panfish population. Walleye stocking (large fingerling at 10/acre) has been in place since roughly 2000. High predators numbers help to keep panfish abundance levels down and increase growth rates.

Other Management Objectives:

- Currently, White Clay Lake is on an 4 year sampling rotation with the next survey scheduled for 2020. In addition to the standard SEII electrofishing survey we also conduct a spring netting survey to assess adult walleye, and northern pike populations.